

## **"Real World" Connections Through Videoconferences**

The Learning Technologies Project (LTP) is a partner in the National Aeronautics and Space Administration's (NASA's) educational technology program unit, an electronic community center that fosters interaction, collaboration, and sharing among educators, learners, and scientists. The goal of the NASA Glenn Research Center's Learning Technologies Project is to increase students' interest and proficiency in mathematics, science, and technology through the use of computing and communications technology and by using NASA's mission in aerospace technology as a theme. The primary components are:

- Beginner's Guide to Aeronautics, including interactive simulation packages and teacher-created online activities.
- NASA Virtual Visits, videoconferences (with online pre- and post-conference activities) connecting students and teachers to NASA scientists and research.

NASA Virtual Visits, uses videoconferencing, the Internet, and interactions with experts to motivate students by providing real-world experiences. Students gather resources from the Web, communicate with team members and experts through e-mail, and are introduced to the thought processes of experts in the research community through videoconferencing connections. Students admit that knowing that experts might see their work is a great motivator!

During the week of July 23, 2001, a workshop called Japan 2001 Science, Creativity and the Young Mind took place at Bristol University in Bristol, England. Coordinated by the Clifton Scientific Trust, it brought together 60 British and Japanese students and provided them with a forum for learning and interacting. One of the aims of the Workshop was to give the combined group a new view of themselves as potential scientists and an ambition to succeed at the highest level.

NASA's involvement with the Workshop began following a successful pilot project with The Holy Cross School, Surrey, UK, in the summer of 2000. Ruth Petersen, Glenn Research Center (GRC) Learning Technologies Project Educational Coordinator, was contacted by Lawrence Williams, Director of Studies at The Holy Cross School, about a possible collaboration with the Director of the Clifton Scientific Trust, Dr. Eric Albone, who shares Petersen's commitment to real world science education. Realizing the true potential of international collaboration using ICT tools, Petersen contacted her colleague, Joe Kolecki.

During the Workshop Kolecki participated with six of the students and their team leaders as a Space Science Team. Working within the framework of a new ICT Learning Model devised in collaboration with Williams, four interactive videoconferencing sessions were held between GRC and Bristol University on four consecutive days. During the sessions, students raised questions

concerning various theories about the probable formation of volcanoes on Mars. Of specific interest was if the great Tharsis volcanoes might be the result of an ancient collision of planetary proportions, or if plate tectonic movement, evidence for which was recently discovered by NASA's Mars Global Surveyor Spacecraft, might account for them.

The shared vision and enthusiasm of the team brought the Space Science project to its successful conclusion. A site has been developed by Glenn's LTP Technology Coordinator to highlight and showcase the entire process. The site includes:

ABOUT THE SPACE SCIENCE TEAM	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Participants</li> <li>• Learning Technologies Project (LTP) and Partner Connection</li> </ul>
TOUR (of the event)	<ul style="list-style-type: none"> <li>• Before</li> <li>• During</li> <li>• After</li> </ul>
STUDENT PRESENTATIONS	<ul style="list-style-type: none"> <li>• British Student's Written Report</li> <li>• Japanese Student's Written Report</li> <li>• PowerPoint Presentation created by the Workshop Team</li> </ul>
LINKS AND RESOURCES	Additional Resources Used by the Students during the Workshop
VISUAL TOUR OF THE EVENT	<ul style="list-style-type: none"> <li>• Still Images</li> <li>• Videos</li> <li>• Animation/VR</li> </ul>
PUBLICATIONS	<ul style="list-style-type: none"> <li>• Before the Workshop</li> <li>• After the Workshop</li> </ul>
FEEDBACK	<ul style="list-style-type: none"> <li>• Comments from all Participants</li> <li>• Message Board for Student Scientists</li> <li>• Message Board for Science Educators and Users of ICT Tools in Education</li> </ul>

Reports completed by the students (Japanese and British) during the weeks following the Workshop have been posted from the site. Message boards for feedback from students who wish to continue or comment on the research and for feedback or comments from educators using the ICT tools in their classrooms or science education in general will keep the site dynamic. I am pleased to share the site with participants at the 2002 Poskole Conference, and I would like to dedicate the presentation to Joe Kolecki and Eric Albone, who were unable to attend.

## Joe "The Lone Ranger" Kolecki



URL: [www.grc.nasa.gov/WWW/K-12](http://www.grc.nasa.gov/WWW/K-12). Follow the link from **What's New** or **Videoconferences with the UK**

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LTP Educational Coordinator: Ruth Petersen ([ruth.petersen@grc.nasa.gov](mailto:ruth.petersen@grc.nasa.gov))

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Cleveland, OH 44135

### Space Science Team

Mr. Lee PARSONS	Hengrove School, Bristol
Mr. Adriano SILVA	Sir George Monoux Sixth Form College, Walthamstow
Ms. Rania KASHI	Cardinal Vaughan School, London
Mr. Akiro NAKAMURA	Kaisei Gakuen
Mr. Toshiyuki ITAI	Tsukuba Daigaku fuzoku Kotogakko
Mr. Ryo NAKAMURA	Rikkyo Niiza High School

#### Team Specialists:

Dr. Carsten Riedel and Mr. Stuart Stansfield, with Professor Steve Sparks FRS,  
University of Bristol, Earth Sciences

Mr. Lawrence Williams, Holy Cross School, New Malden

By video link, Mr. Joseph Kolecki, Ms. Ruth Petersen, and colleagues, National  
Aeronautics and Space Administration (NASA) Glenn Learning Technologies  
Project, Cleveland, Ohio, US

#### Team Facilitator:

Ms. Kako Iwaki



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# **Real World™ Communications Through Videokonferences**

Sponsored by: Learning Technologies Project,  
National Aeronautics and Space Administration,  
John H. Glenn Research Center, Cleveland, Ohio,  
USA

Presented by: Ruth Petersen, Educational  
Coordinator

Glenn Research Center  
Learning Technologies Project



April 2002



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# Research and develop educational products and services that:

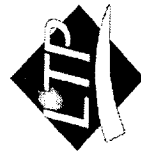
Use NASA Data.

Use Innovative, Emerging Technologies.

Serve Formal and Informal Education.

Serve Lifelong Learners.

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# Provide Real World Connections

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Boeing's Guide to Aerodynamics

NASA Virtual Vistas

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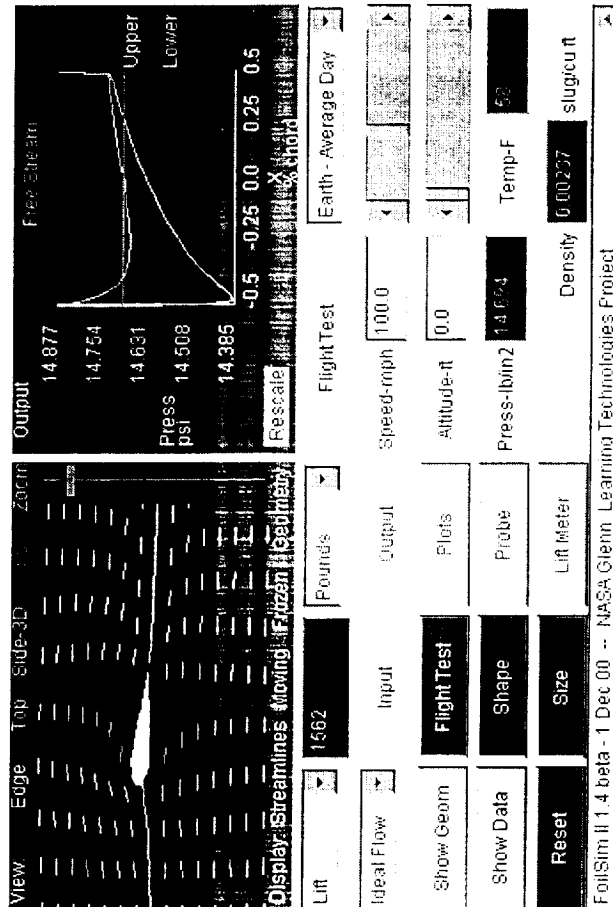
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# Beginner's Guide to Aerodynamix

## FoilSim II Applet

This is a beta 1.4 version of the FoilSim II program, and you are invited to participate in the beta testing. If you find errors in the program or would like to suggest improvements, please send an e-mail to [benerson@grc.nasa.gov](mailto:benerson@grc.nasa.gov).

# FoilSim



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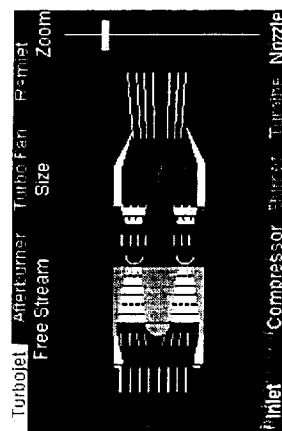


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# Boomer's Guide to Propulsion

## EngineSim Beta Version 1.5b

This is a beta version of the EngineSim program, and you are invited to participate in the beta testing. If you find any errors in the program or would like to suggest improvements, please send an e-mail to [benison@grc.nasa.gov](mailto:benison@grc.nasa.gov).



Click on component name or part  
on the figure at the left  
to obtain more information



Speed-mph	0.0	Output Display	Photos
Mach	0.0	Design Mode	English Units
Altitude-ft	0.0	Load My Design	Reset
Throttle	100.0	Engine	Performance
Spec. Heat	1.4	Thrust-lbs	6766
		Weight-lbs	640
		Fuel-lbm/hr	5638
		Air-lbm/sec	72

At Turbo running



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# Boomer's Guide to Model Rockets

## RocketModeler Applet

This is a beta 1.1 version of the **RocketModeler** program written by Eric Bishop from the Ohio State University. You are invited to participate in the beta testing. If you find errors in the program or would like to suggest improvements, please send an e-mail to [benison@glrc.nasa.gov](mailto:benison@glrc.nasa.gov).

RocketModeler

### Launch Rocket

### Design

### Materials

Body Length(cm) :	Nose Cone Length(cm) :	Fin Width(cm) :	Zoom(%) :
33.0	8.0	4.0	67
Body Diameter(cm) :	Fin Length(cm) :	Fin Height(cm) :	Number of Fins :
2.5	10.0	0.0	<input checked="" type="checkbox"/> Four Fins <input type="checkbox"/> Three Fins
Center of Gravity(cm) :	Center of Pressure(cm) :	Rocket Mass(g) :	
19.75	12.87	64.23	



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# NASA Virtual Visits

15 Virtual Visits

15 Virtual Visits

15 Virtual Visits

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# NASA Virtual Visits Feedback



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**Joe (Kolecki) motivated, challenged, and inspired our students. This has been a wonderful opportunity to excite our kids about learning. Without the technology we would probably never have had the chance to meet and learn from a NASA scientist.**

**--Instructional Technical Specialist,  
Richardson West Junior High, Texas**

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# What's ahead for the Beginner's Guide to Aerodynamics?

by Robert L. Anderson

and David L. Anderson

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# What's ahead for NASA Virtual Visits?

Get The 3D Visualization Experiences

from 2D Source Material.

Improve the Quality of Real-Time-Service

Teacher Professional Development.

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# Now on to the Space Science Team!

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